

REMARKS

Claims 1-25 were pending at the time of examination. Claims 1-9, 11-16, 19, 20 and 24 stand rejected under 35 USC §103(a) as being unpatentable over Tietz in view of Xu et al. Claim 10 stands rejected under 35 USC §103(a) as being unpatentable over Tietz as modified by Xu et al. and further in view of Shendon. Claims 17, 18, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 21-23 are allowed. Applicants have amended claims 1, 10, 17, and 20, and have cancelled claims 16 and 19. In view of the amendments and arguments set forth below, Applicants respectfully submit that all claims are in condition for allowance.

I. Rejection of claims 1-9, 11-16, 19, 20, and 24 under 35 USC 103(a).

At pages 2 and 3 of the Office Action, the Examiner rejected claims 1-9, 11-16, 19, 20, and 24 as being obvious over Tietz (U.S. Patent No. 6,302,767) in view of Xu et al (U.S. Patent No. 6,406,363). Applicants respectfully traverse this rejection.

Applicants respectfully note that Tietz is unavailable as prior art under 35 U.S.C. 103(c). Subject matter which qualifies as 'prior art' under 35 U.S.C. 102(e) is not to be considered for 35 U.S.C. 103, provided the subject matter and the claimed invention were commonly owned at the time the invention was made.

In this case, Tietz was patented on October 16, 2001, which is *after* the filing date of May 7, 2001. In addition, both Tietz and the present invention were commonly owned at the time the invention was made. Tietz is assigned on its face to Applied Materials, Inc. of Santa Clara, CA. The present application is also assigned to Applied Materials, Inc. of Santa Clara, CA. The assignment was submitted to the Patent Office with the filing of the application, and a copy is attached as Exhibit A. Based on the foregoing, Tietz cannot be used as prior art in a 35 U.S.C. 103(a) rejection of the Applicants' claims.

Regarding Xu, the Examiner stated "Xu et al. teaches a belt having a plurality of uniformly spaced grooves, oriented substantially *perpendicular to the first direction of motion*,

(fig. 1)..." (emphasis added). Applicants respectfully note that this statement by the Examiner is incorrect. The grooves disclosed in Xu are actually *parallel* to the first direction of motion, and not perpendicular as stated by the Examiner.

The Examiner cites Fig. 1 of Xu as showing grooves that are perpendicular to first direction of motion. Fig. 1, however, does not illustrate any grooves at all. In addition, the discussion of Fig. 1 in the specification does not teach or suggest anything related to grooves. It is only later, in reference to Fig. 4, that grooves are discussed in the specification. And as discussed below, the grooves of Fig. 4 are *parallel* to the first direction of motion, not perpendicular.

Applicants believe that the Examiner may be under the impression that the lines shown on the polishing belt in Fig. 1 are grooves. These lines are not grooves, they are simply lines used to denote shading. As noted in MPEP Section 608.02, "[t]he use of shading in views is encouraged if it aids in understanding the invention and if it does not reduce legibility....Flat parts may also be lightly shaded....Spaced lines for shading are preferred." Applicants note that all of the elements in Fig. 1 have these same shading lines, including the slurry dispenser, the wafer, the conditioner, the polishing head, the monitoring system, the platen, and the rollers. Clearly these other elements do not contain grooves, therefore the lines shown on the polishing belt are being used for shading.

Regarding Fig. 4 of Xu, a cross-section of the end of the polishing belt is shown. The cross-section is taken from the location denoted by reference numeral 156 in Fig. 3. Because this cross-section is taken from the end of the polishing belt, it is clear that the grooves shown in Fig. 4 travel along the length of the polishing belt and are oriented in a direction that is parallel to the first direction of motion. For Fig. 4 to be illustrating perpendicular grooves, the cross-section would have to be taken from the side of the polishing belt.

Contrary to Xu, independent claims 1, 21, and 24 disclose grooves that are either perpendicular or at an angle relative to the first direction of motion. Each of these claims includes at least one set of grooves that are not parallel to the first direction of motion, and therefore contain limitations that are not disclosed or suggested by Xu. As such, the Examiner's obviousness rejection of claims 1-9, 11-16, 19, 20, and 24 has been overcome, and Applicants respectfully request that these claims be allowed.

II. Rejection of claim 10 under 35 USC 103(a).

At page 3 of the Office Action, the Examiner rejected claim 10 as being obvious over Tietz (U.S. Patent No. 6,302,767) as modified by Xu et al (U.S. Patent No. 6,406,363) and further in view of Shendon (WO 97/20660). Applicants respectfully traverse this rejection.

As noted above, Applicants believe that claim 1 is now in condition for allowance. As such, the Examiner's rejection of claim 10 has been overcome.

III. Rejection of claim 10 under 35 USC §112

At page 2 of the Office Action, the Examiner rejected claim 10 under 35 USC §112 as containing a limitation with insufficient antecedent basis. Claim 10 has been amended to overcome this rejection, and is therefore in condition for allowance.

IV. Allowed Claims

At page 4 of the Office Action, claims 17, 18 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervenient claims. Claims 21-23 are allowed. Applicants thank the Examiner for this indication of allowability. Applicants believe they have put the rejected base claims in condition for allowance, and therefore claims 17, 18, and 25 are believed to be allowable as dependent claims.

ASSIGNMENT FOR APPLICATION FOR PATENT

WHEREAS:

Names and Addresses of Inventors:

Christopher W. Smith
25400 Becky Lane
Los Altos Hills, CA 94022

John M. White
2811 Colony View Place
Hayward, CA 94541

(hereinafter referred to as Assignors), have invented a certain invention entitled:

Chemical Mechanical Polisher With Grooved Belt

for which application for Letters Patent in the United States was filed on, under Serial No.,

executed on even date herewith; and

WHEREAS, Applied Materials, Inc., a corporation of the State of Delaware, having a place of business at 3050 Bowers Avenue, Santa Clara, California 95054 (hereinafter referred to as Assignee), is desirous of acquiring the entire right, title and interest in and to said application (hereinafter referred to as the Application), and the invention disclosed therein (hereinafter referred to as the Invention), and in and to all embodiments of the Invention, heretofore conceived, made or discovered by said Assignors, and in and to any and all patents, inventor's certificates and other forms of protection (hereinafter referred to as the Patents) thereon granted in any and all countries and groups of countries.

NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by said Assignors to have been received in full from said Assignee:

1. Said Assignors hereby sell, assign, transfer and convey to Assignee the full and exclusive right, title and interest (a) in and to said Application and said Invention; (b) in and to all rights to apply for patents on said Invention in any and all countries pursuant to the International Convention for the Protection of Industrial Property or otherwise; (c) in and to any and all Applications filed and any and all Patents granted on said Invention in any and all countries and groups of countries, including each and every Application filed and each and every Patent granted on any application which is a division, substitution, or continuation of said Application; and (d) in and to each and every reissue or extension of any of said Patents.
2. Said Assignors hereby covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest to said Invention herein conveyed in any and all countries and groups of countries. Such cooperation by said Assignors shall include prompt production of pertinent facts and documents, giving testimony, execution of petitions, oaths, specifications, declarations or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for prosecuting any of said applications; (c) for filing and prosecuting substitute, divisional, continuing or additional applications covering said Invention; (d) for filing and prosecuting applications for reissuance of any of said Patents; (e) for interference or other priority proceedings involving said Invention; and (f) for legal proceedings involving said Invention and any application therefor and any Patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Assignors in providing such cooperation shall be paid for by said Assignee.
3. The term and covenants of this agreement shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding upon said Assignors, their respective heirs, legal representatives and assigns.

4. Said Assignors hereby warrant and represent that they have not entered and will not enter into any assignment, contract, or understanding in conflict herewith.

IN WITNESS WHEREOF, the said Assignors have executed and delivered this instrument to said Assignee on the dates indicated below.

Date:

5/4/01


CHRISTOPHER W. SMITH

Date:

5/4/01


JOHN M. WHITE

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